

WHAT IS CLAIMED IS:

1. A method for recycling water used in the processing of poultry comprising the steps of:

recovering a portion of water used in a non-chilling processing step of poultry processing;

treating said recovered water to reduce impurities and provide disinfection, said step of treating including reacting ozone with said recovered water to produce surfactants; and

reusing said treated water in at least one other step of poultry processing.

2. The method according to claim 1, wherein said step of recovering water is from at least one step in said poultry processing selected from the group consisting of wash steps, non-final rinse steps, water sprays, flumes and final rinse step.

3. The method according to claim 1, wherein said step of treating water includes reacting ozone with said recovered water to produce surfactants and reduce the surface tension of said recovered water.

4. The method according to claim 1, wherein said step of treating includes removal of one or more contaminants selected from the group consisting of solid matter, floatable fats, oils, grease, lipids, blood proteins, carbohydrates, suspended and dissolved organic materials, animal parts and debris.

5. The method according to claim 1, wherein said treated water has a turbidity of less than or equal to 5 Nephelometric Turbidity Units (NTU).

6. The method according to claim 1, wherein said step of recovering water includes passing said water through a recovery sump comprising a basin having a first compartment for receiving said recovered water and barrier in said basin forming a second compartment, said first compartment having at least one weir pipe for skimming solids from the surface of said recovered water leaving skimmed water which, when said skimmed water reaches a level higher than said barrier, flows into said second compartment, and wherein said second compartment has an exit orifice in fluid communication therewith for allowing said skimmed water to exit said basin for further processing.

10 7. The method according to claim 6, wherein said recovery sump further comprises a filter for screening said recovered water prior to said recovered water being received by said first compartment, and said weir pipe communicates with a drain whereby the skimmed solids may be continuously removed from said recovered water.

8. The method according to claim 6, wherein said basin further comprises at least one drain outlet.

15 9. The method according to claim 6, wherein said basin comprises a plurality of compartments each, except said first compartment, in fluid communication with the preceding compartment, and each, except the last compartment having a weir pipe for continuous skimming of solids.

10. The method according to claim 1, wherein said step of treating further comprises
20 the steps of:

filtering said recovered water to remove non-dissolved components; and

disinfecting said filtered water to limit its microbiological activity.

25 11. The method according to claim 1, further including a step of chilling poultry, whereby no more than approximately 40 percent of said recovered water originates in said chilling step.

12. The method of processing poultry according to claim 1, wherein said step of reusing said treated water includes introduction of said treated water into pores and membranes of poultry.

13. A method for recycling water used in the processing of poultry comprising the
5 steps of:

recovering a portion of water used in a non-chilling processing step of poultry processing;

10 treating said recovered water to reduce impurities and provide disinfection, said step of treating including introducing ozone and chlorine into said recovered water, said step of treating further including reacting said ozone with said chlorine to generate a biocide; and

reusing said treated water in at least one other step of poultry processing.

14. The method of processing poultry according to claim 13, wherein said step of treating includes generating hypochlorous acid via said reaction of said ozone and said chlorine.

15. The method of processing poultry according to claim 13, wherein said step of treating includes destroying bacteria and microorganisms from said recovered water.

16. The method of processing poultry according to claim 13, wherein said step of treating includes releasing and destroying bacteria and microorganisms from said poultry.

17. The method according to claim 13, wherein said treated water has a turbidity of less than or equal to 5 Nephelometric Turbidity Units (NTU).

18. The method according to claim 13, wherein said step of recovering water includes passing said water through a recovery sump comprising a basin having a first compartment for receiving said recovered water and barrier in said basin forming a second compartment, said first compartment having at least one weir pipe for skimming solids from the surface of said recovered water leaving skimmed water which, when said skimmed water reaches a level higher than said barrier, flows into said second compartment, and wherein said second compartment has an exit orifice in fluid communication therewith for allowing said skimmed water to exit said basin for further processing.

19. The method according to claim 18, wherein said recovery sump further comprises a filter for screening said recovered water prior to said recovered water being received by said first compartment, and said weir pipe communicates with a drain whereby the skimmed solids may be continuously removed from said recovered water.

20. A method of processing poultry comprising the steps of:
recovering water used in at least one processing step associated with processing poultry;
treating said recovered water to reduce microorganisms within said poultry, said step of treating including introducing ozone and chlorine into said recovered water, reacting ozone with said recovered water to produce surfactants such that the surface tension of said recovered water about said poultry is reduced, said step of treating further including reacting said ozone with said chlorine to generate a biocide such that bacteria and microorganisms are released from said poultry and destroyed; and
reintroducing said treated water into any of said at least one processing step whereby said treated water is introduced into said poultry and said introduction reduces the level of microorganisms within said poultry.

21. A method for recycling water used in the processing of poultry comprising the steps of:

recovering a portion of water used in a non-chilling processing step of poultry processing, said recovered water containing animal fats;

5 treating said recovered water to reduce impurities and provide disinfection, said step of treating further including introducing ozone into said recovered water, wherein said introduction of said ozone saponifies said animal fats to produce a surfactant, introducing chlorine into said recovered water, and reacting said ozone with said chlorine to generate a biocide; and

reusing said treated water in at least one other step of poultry processing.

10 22. In a method for processing poultry comprising the steps of washing, rinsing, and chilling said poultry with water, the improvement comprising:

15 introducing a surfactant into said water, whereby said surfactant reacts with said water to reduce the surface tension of said water.